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| APPLICATION NO. 09/351,147 | FILING DATE 07/12/99 | FIRST NAMED INVENTOR CHESTER A | ATTORNEY DOCKET NO. 10164-1 |
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| EXAMINER GRIFFIN, W |
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| ART UNIT 1764 | PAPER NUMBER 18 |
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DATE MAILED: 10/22/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/351,147

Applicant(s)

CHESTER ET AL.

Examiner

Walter D. Griffin

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

The rejections under 35 U.S.C. § 102 and 103 as being anticipated by or being unpatentable over Drake as detailed in paper no. 16 have been withdrawn in view of the amendment filed on September 6, 2001 and remarks contained therein. Accordingly, the arguments concerning these rejections will not be addressed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, 7, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0323736.

The EP reference discloses a process for converting a C₅ to C₁₀ paraffinic hydrocarbons into aromatic hydrocarbons and light olefins. The feed to be converted can be a coker gasoline, light FCC gasoline, C₅ to C₇ fractions of straight run naphtha and pyrolysis gasoline. These feeds would necessarily boil within the claimed ranges. The process comprises contacting the feed with a catalyst comprising ZSM-5 or ZSM-11. The zeolite may have a silica to alumina ratio of 100 or less. The zeolite may be treated with a phosphorus compound. The catalyst also contains a

Art Unit: 1764

binder material that may be an inactive material such as clay. Active matrix material is not required. Therefore, the limitation that the catalyst contains less than 20 wt.% of active matrix is embraced by the EP reference. Since the process of the EP reference converts the same feeds as claimed with the same catalyst as claimed, the product composition must inherently contain the components in the amounts claimed in claims 7 and 10. See page 2, lines 33-42, page 3, lines 21-54, page 4, lines 11-53, and page 5, lines 13-35.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0323736.

The EP reference discloses a process for converting a C₅ to C₁₀ paraffinic hydrocarbons into aromatic hydrocarbons and light olefins. The feed to be converted can be a coker gasoline, light FCC gasoline, C₅ to C₇ fractions of straight run naphtha and pyrolysis gasoline. These feeds would necessarily boil within the claimed ranges. The process comprises contacting the feed with a catalyst comprising ZSM-5 or ZSM-11. The zeolite may have a silica to alumina ratio of 100 or less. The zeolite may be treated with a phosphorus compound. The catalyst also contains a binder material that may be an inactive material such as clay. The ratio of binder to zeolite may be at least 70:30. Conversion conditions include temperatures ranging from 100° to 700°C, a pressure from 10.1 to 720 kPa (1.5 psi to 104 psi), and a WHSV from 0.5 to 400. See page 2, lines 33-42, page 3, lines 21-54, page 4, lines 11-53, and page 5, lines 13-35.

The EP reference does not disclose the claimed amount of phosphorus in the catalyst and does not disclose all the claimed reaction conditions.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by including phosphorus in the amounts claimed because one would utilize phosphorus amounts including those that are claimed in order to provide a process that results in the desired type of conversion.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the EP process by utilizing a catalyst/hydrocarbon feed weight ratio within the range claimed because one would utilize any ratio the would result in the effective conversion of the hydrocarbons to the desired product.

Art Unit: 1764

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0323736 as applied to claim 1 above, and further in view of Drake et al. (5,898,089).

As discussed above, the EP reference does not disclose the co-feeding of steam with the feed.

The Drake reference discloses the co-feeding of steam with the feed. The weight ratio of the steam can range from about 0.1:1 to about 10:1. See col. 8, line 66 through col. 9, line 21.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the EP process by including steam with the feed in the amount claimed as suggested by Drake because effective conversion to olefins and aromatics would be expected.

Response to Arguments

The argument that the EP 0323736 reference does not positively recite introducing phosphorus into the catalyst is not persuasive because on page 3, lines 42-54, the reference discloses that the zeolite may include various impregnated oxides such as oxides of phosphorus.

The argument that the EP reference fails to specifically disclose catalysts having silica to alumina molar ratios less than 70 is not persuasive. The EP reference discloses on page 5, lines 26-35, that the molar ratio may be 100 or less. This would necessarily include values within the claimed range.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode can be reached on 703-308-4311. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-5408 for regular communications and 703-305-3599 for After Final communications.

Application/Control Number: 09/351,147

Page 7

Art Unit: 1764

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.



Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
October 16, 2001